MMHCC
the Mouse Models
of Human Cancers Consortium

MMHCC Newsletter March 2007

MouseLine

Mouse Models Offer Promise in the Science of Cancer Prevention

The new generation of genetically-engineered mouse models (GEMs) holds promise for helping cancer prevention researchers refine and speed up testing of potential preventive agents. These mice are programmed to develop specific types of cancer in ways that mimic human cancer. That may make it easier for scientists, using sophisticated imaging technologies, to gauge the effects of cancer preventive substances.

This summer, NCI will convene a "think tank" of 15-18 invited experts from the fields of early intervention, prevention, and prevention screening, as well as from the NCI Mouse Models of Human Cancers Consortium (MMHCC), to develop research plans that fully explore the promise of GEMs.

"The meeting will bring together a cadre of scientists from diverse fields," noted Dr. Cory Abate-Shen, professor with the Center for Advanced Biotechnology and Medicine, UMDNJ-Robert Wood Johnson Medical School. "This will facilitate a dialogue, which is critical. Working together, we can develop ideas for studies that will enable us to assess the value of these newer mouse models for cancer prevention."

In NCI's Division of Cancer Prevention (DCP), the Chemopreventive Agent Development Research Group, as well as many NCI funded investigators, have published more than a hundred studies using GEMs for the past decade. These studies in multiple organ systems have identified a variety of agents that have progressed to human clinical trials, including nonsteroidal anti-inflammatory drugs (NSAIDS), nitric-oxide-releasing NSAIDS, glucocorticoids, retinoid X receptor agonists, aromatase inhibitors, tazarotene, and ACAPHA (a mixture of Chinese herbs). However, more recently developed GEM models may be especially well suited to future prevention studies.

The upcoming think tank will address several key questions related to this, explained NCI's Dr. Cheryl Marks, who administers the MMHCC. "The intent of the meeting is to identify the principal challenges facing early intervention and prevention, define the future goals, identify limitations of mouse models and strategies to overcome those limitations, and discuss how to effectively use these newer mouse models for cancer prevention."

Until now, research with GEMs and other mouse models in the MMHCC has focused more on their applicability for safe and effective treatments for cancer rather than on prevention.

MouseLine cont.

Last year in *Toxicologic Pathology*, participants from a previous MMHCC workshop reported on precancer research. "The scientific community suddenly possesses a wealth of precancers available for study in a variety of organ systems," they wrote. "Since most of the GEMs have been constructed to test oncogenes or tumor suppressor genes known to be involved in human cancer, these precancers should become primary targets for understanding, treatment, and prevention and ideal representations of processes occurring in human precancers."

Dr. Abate-Shen noted that human clinical trials for cancer preventive agents can take many years before delivering definitive results, whether positive or negative, about the drug or nutritional supplement. "Our goal would be to test agents in these newer mouse models to understand their mechanism of action and to guide clinical studies," she said.

Source: NCI Cancer Bulletin, March 13, 2007
http://www.cancer.gov/ncicancerbulletin/cancerbulletin/page3

Repository News

The MMHCC Mouse Repository is an NCI-supported resource for the distribution of mouse cancer models and associated strains. The Repository makes strains available to all members of the scientific community. Up to 3 breeder pairs of each available strain may be ordered.

Newly accepted strains
The following strains have recently been accepted into the MMHCC Repository and are available for distribution (*please click on the specific link, below, for additional information*):

1. B6.129S6-*Tgfbr2* ^{tm1Hlm} (Tgfbr2 flox)
   http://mouse.ncifcrf.gov/available_details.asp?ID=01XN5
2. FVB-Tg(ACTB-SB10)1Dla (CAGGS-SB10)
   http://mouse.ncifcrf.gov/available_details.asp?ID=01XN7
3. FVB-TgTn(sb-T2/Onc)76Dla (76 T2/Onc)
   http://mouse.ncifcrf.gov/available_details.asp?ID=01XN8

More information can be found on the Mouse Repository's website: http://mouse.ncifcrf.gov

Meetings

April 9 – 14, 2007
Comprehensive Approaches to the in vivo Assessment of Cardiovascular Function in Mice
Bar Harbor, Maine
Meeting Information: http://www.jax.org/courses/events/coursedetails.do?id=434&detail=scope

April 10 – 13, 2007
Cambridge Healthtech Institute's – 8th Annual Microarrays in Medicine: Optimizing Diagnostics and Therapeutics
Boston, Massachusetts
Meeting Information: http://www.gotsummit.com

April 14 - 18, 2007
AACR 98th Annual Meeting
Los Angeles, California
Meeting Information: http://www.aacr.org/home/scientists/meetings--workshops/annual-meeting-2007.aspx

Please visit the **caMOD poster** at the AACR Poster Session for "Tumor Biology"
On Tuesday, April 17, 8:00 AM to 12:00 PM
Abstract No.: 3864

April 15 – 19, 2007
SBS 13th Annual Conference & Exhibition: Advancing the Science of Drug Discovery
Montreal, Canada
Meeting Information: http://www.sbsonline.org

April 27 – 28, 2007
34th Maine Biological and Medical Sciences Symposium
Salisbury Cove, Maine
Meeting Information: http://www.mdibl.org/courses/mbmss07.shtml

April 30 - May 2, 2007
5th Annual Bio-Tech Conference & Expo
Boston, Massachusetts
Meeting Information: http://www.bio-itworldexpo.com/

Notices and Funding Opportunities

Request for Information (RFI): Functional Validation of Environmentally-Responsive Genetic Variants
NOT-ES-07-006
National Institute of Environmental Health Sciences
http://grants.nih.gov/grants/guide/notice-files/NOT-ES-07-006.html

Lung Cancer and Inflammation (R01)
RFA-CA-07-046
National Cancer Institute
http://grants.nih.gov/grants/guide/rfa-files/RFA-CA-07-046.html

Diet Composition and Energy Balance (R01)
PA-07-218
Multiple Institutes
http://grants.nih.gov/grants/guide/pa-files/PA-07-218.html

Academic-Industrial Partnerships for Development and Validation of In Vivo Imaging Systems and Methods for Cancer Investigations (R01)
PAR-07-214
National Cancer Institute
http://grants.nih.gov/grants/guide/pa-files/PAR-07-214.html

The 2007 Annual Institutional Animal Care and Use Committee (IACUC) Conference: Excellence in Animal Care and Use-Path or Destination? March 26-27, 2007, San Diego, CA
NOT-OD-07-055
National Institutes of Health
http://grants.nih.gov/grants/guide/notice-files/NOT-OD-07-055.html

Technology Development for the Detection and Evaluation of Chemical and Biological Carcinogens (SBIR) [R43/R44]
PAS-07-240
National Cancer Institute
http://grants.nih.gov/grants/guide/pa-files/PAS-07-240.html

NOTICE: Administrative Supplements for Making Knockout Mice
NOT-HG-07-011
Multiple Institutes
http://grants.nih.gov/grants/guide/notice-files/NOT-HG-07-011.html

caBIG™ at the AACR Meeting

The Cancer Biomedical Informatics Grid™ (caBIG™) is a virtual informatics infrastructure that connects data, research tools, scientists and institutions to leverage the combined strengths and expertise in an open environment with common standards. The mission of caBIG™ is to accelerate the discovery of new approaches for the detection, diagnosis, treatment, and prevention of cancer. Presentations will highlight some of the tools available to allow analysis of diverse data sources in order to enable integrative translational cancer research: integration of basic research data with tissue pathology and clinical data in a grid environment. Ultimately these tools will enable scientists, pathologists, and clinicians to improve the care and treatment of patients suffering from cancer. Applications discussed in this session will be demonstrated at the caBIG™ learning center.

cancer Biomedical Informatics Grid
NCI Sponsored Session
Monday, April 16th, 10:45 am-12:15 pm, Room 301 A-B

Presentations of caBIG tools developed to support translational research

- **10:45 am**
  caBIG™ Overview
  Juli Klemm, National Cancer Institute, Rockville, MD

- **11:05 am**
  The cancer Translational Research Informatics Platform (caTRIP)
  Patrick McConnell, Duke Comprehensive Cancer Center, Durham, NC

- **11:25 am**
  caBench-to-Bedside (caB2B)
  Rakesh Nagarajan, Siteman Cancer Center, St. Louis, MO

- **11:15 am**
  geWorkbench: an open-source, grid-enabled technology platform for integrated genomics
  Aris Floratos, Columbia University, NY

- **12:05pm**
  Discussion

caBIG participants will be available to answer your questions about the caBIG program and open source tools.

To unsubscribe from this newsletter please send an email to Dr. Betty Tarnowski tarnowsb@mail.nih.gov Send meeting announcements and other information you would like to have included in this newsletter to Ulli Wagner: ulrike@mail.nih.gov

caBIG Learning Center at the AACR Meeting
Room 513

Live Demonstrations of caBIG Tools:

Monday, April 16th
1:00pm-5:00pm
1:00pm -3:00pm: caTRIP, caB2B, geWorkbench
3:00pm – 5:00pm: caArray and caMOD

Tuesday, April 17th
9:00am-12:00pm
9:00am – 10:00am: caArray and geWorkbench
10:00am – 12:00pm: Rembrandt, CGEMS, caMOD

caArray
A standards based database for microarray data management and annotation

caB2B - caBench-to-Bedside
Query of tissues and associated clinical and functional genomics data across multiple sites, and analyze these data using grid services

CGEMS - The Cancer Genetic Markers of Susceptibility
Access to SNP association findings, populations frequency, genotype, and phenotype data

caMOD - Cancer Models Database
Provides information about rodent and other animal models for human cancer to the research community

caTRIP - The cancer Translational Research Informatics Platform
Brings together disparate data sources such as tumor registry, tissue banks, pathology and SNP data to facilitate outcomes analysis

geWorkbench
Analysis and visualization tools for gene expression, sequences, pathways, and other biomedical data

Rembrandt - Repository of Molecular Brain Neoplasia Data
Ad hoc querying and reporting across multiple data domains, such as Gene Expression, Chromosomal aberrations and clinical data

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